IN THE CLAIMS:

Please amend claims 71, 81, 84 and 97 as follows:

Claims 1-70 (Cancelled)

71. (Currently Amended) A system for measuring a thickness of a circuit component on a printed circuit board (PCB), said system comprising:

a first circuit;

a power plane coupled to said first circuit powered by a power strip;

a calibration strip having a predetermined width and being disposed in said PCB~~, said calibration strip~~;

a temperature sensor coupled to said calibration strip to measure a temperature; and

a second circuit coupled to said temperature sensor and configured to determine the thickness of said calibration strip based on at least said temperature of said calibration strip.

72. (Previously Presented) The system according to claim 71, wherein said power strip and said calibration strip comprise a same type of material.

73. (Previously Presented) The system according to claim 72, wherein said power strip and said calibration strip comprise substantially copper.

74. (Previously Presented) The system according to claim 71, wherein said second circuit is configured to calculate said thickness of said calibration strip further based upon a first voltage across at least two vias of said power strip and a second voltage across at least two vias of said calibration strip.

75. (Previously Presented) The system of claim 74, wherein said second circuit is coupled to said power strip and to said calibration strip, and said second circuit is further configured to measure said first voltage and said second voltage.

76. (Previously Presented) The system of claim 75, wherein said calibration strip and said power strip are each of a predetermined length, and said second circuit is configured to calculate said thickness of said calibration strip further based said predetermined lengths.

77. (Previously Presented) The system according to claim 75, wherein said power strip has a first predetermined length and width, and said calibration strip has a second predetermined length and width, and said second circuit is configured to calculate said thickness of said calibration strip further based upon said first predetermined length and width and said second predetermined length and width.

78. (Previously Presented) The system according to claim 75, wherein a first power supply is connected to said power strip and a second power supply is connected to said calibration strip, said second power supply comprising a precision current supply,

and wherein said thickness is determined further based on a value of a current from said precision current supply.

79. (Previously Presented) The system according to claim 78, wherein said precision current supply comprises a precision resistor connected in series with said calibration strip.

80. (Previously Presented) The system according to claim 75, wherein said second circuit further comprises:

a first operational amplifier configured to measure said first voltage;

a second operational amplifier configured to measure said second voltage; and

an analog to digital converter receiving said first and second voltages output from said first and second operational amplifiers respectively, and said temperature from said temperature sensor.

81. (Currently Amended) The system according to claim 75, wherein said second circuit further comprises:

a differencing circuit configured to measure said first voltage and said second voltage and produce a first signal and a second signal corresponding to said first voltage and said second voltage respectively;

~~a digital to analog~~ an analog to digital converter configured to receive said first signal and said second signal from said differencing circuit and to convert said first signal and said second signal into a first digital signal and a second digital signal; and

a calculation circuit configured to receive said first and second digital signals and perform said power calculation.

82. (Previously Presented) The system according to claim 81, wherein said calculation circuit comprises a computer processor.

83. (Previously Presented) The system according to claim 75, wherein said calibration strip is disposed in a same proximity of said power strip on said PCB.

84. (Currently Amended) A system for measuring a thickness of circuit components on a printed circuit board (PCB), said system comprising:

a first circuit;

a power plane coupled to said first circuit powered by a power strip;

a calibration strip having a predetermined width and being disposed in said PCB~~, said calibration strip~~;

a temperature regulator coupled to said PCB and configured to maintain said PCB at a set temperature; and

a second circuit configured to determine the thickness of said calibration strip based on at least said set temperature of said calibration strip.

85. (Previously Presented) The system according to claim 84, wherein said power strip and said calibration strip comprise a same type of material.

86. (Previously Presented) The system according to claim 85, wherein said power strip and said calibration strip comprise substantially copper.

87. (Previously Presented) The system according to claim 86, wherein said second circuit is configured to calculate said thickness of said calibration strip further based upon a first voltage across at least two vias of said power strip and a second voltage across at least two vias of said calibration strip.

88. (Previously Presented) The system of claim 87, wherein said second circuit is coupled to said power strip and two said calibration strip, and said second circuit is further configured to measure said first voltage and said second voltage.

89. (Previously Presented) The system of claim 88, wherein calibration strip and said power strip are each of a predetermined length, and said second circuit is configured to calculate said thickness of said calibration strip further based said predetermined lengths.

90. (Previously Presented) The system according to claim 89, wherein said power strip has a first predetermined length and width, and said calibration strip has a second predetermined length and width, and said second circuit is configured to calculate said

thickness of said calibration strip further based upon said first predetermined length and width and said second predetermined length and width.

91. (Previously Presented) The system according to claim 89, wherein a first power supply is connected to said power strip and a second power supply is connected to said calibration strip, said second power supply comprising a precision current supply, and wherein said thickness is determined further based on a value of a current from said precision current supply.

92. (Previously Presented) The system according to claim 91, wherein said precision current supply comprises a precision resistor connected in series with said calibration strip.

93. (Previously Presented) The system according to claim 89, wherein said second circuit further comprises:

a first operational amplifier configured to measure said first voltage;

a second operational amplifer configured to measure said second voltage; and

an analog to digital converter receiving said first and second voltages output from said first and second operational amplifiers respectively, and said temperature from said temperature regulator.

94. (Previously Presented) The system according to claim 89, wherein said second circuit further comprises:

a differencing circuit configured to measure said first voltage and said second voltage and produce a first signal and a second signal corresponding to said first voltage and said second voltage respectively;

an analog to digital converter configured to receive said first signal and said second signal from said differencing circuit and to convert said first signal and said second signal into a first digital signal and a second digital signal; and

a calculation circuit configured to receive said first and second digital signals and perform said power calculation.

95. (Previously Presented) The system according to claim 94, wherein said calculation circuit comprises a computer processor.

96. (Previously Presented) The system according to claim 84, wherein said calibration strip is disposed in a same proximity of said power strip on said PCB.

97. (Currently Amended) The system according to claim 89, wherein said calibration strip is disposed in a same proximity of said power strip on said PCB. [[1.]]

98. (Previously Presented) The system according to claim 84, wherein said temperature regulator comprises a fan and a heating element.

99. (Previously Presented) The system according to claim 89, wherein said temperature regulator comprises a fan and a heating element.

100. (Previously Presented) A method for determining a thickness of a power strip of a circuit on a printed circuit board (PCB), said method comprising the steps of:

disposing a circuit onto a PCB;

embedding a power strip having a first predetermined length and width into said PCB between a first power supply and said circuit;

disposing a calibration strip having a second predetermined length and width into said PCB;

providing a second power supply to said calibration strip and grounding said power strip to form a current flow through said power strip;

measuring a first voltage across said power strip;

measuring a second voltage across said calibration strip;

determining a temperature of said PCB; and

calculating a thickness of said power strip based on said first and second voltages, said temperature, said first predetermined length and width and said second predetermined length and width.

101. (Previously Presented) The method of claim 100 wherein the step of determining said temperature comprises measuring the temperature of said calibration strip; and

wherein said step of calculating said thickness calculates said thickness further based on said temperature of said calibration strip.

102. (Previously Presented) The method of claim 100 wherein said calibration strip is placed in close proximity to said power strip during said embedding step.

103. (Previously Presented) The method of claim 100 further comprising the step of:

disposing a calibration circuit on said PCB configured to perform said measurement and said calculation steps.

104. (Previously Presented) The method of claim 103 wherein the step of calculating said thickness further comprises steps of:

measuring and amplifying said first voltage;

measuring and amplifying said second voltage; and

converting said first and second voltages into first and second digital signals respectively.

105. (Previously Presented) The method of claim 104 wherein the step of disposing said calibration circuit further comprises the steps of:

disposing a differencing circuit on said PCB configured to measure said first voltage and said second voltage;

disposing an analog to digital converter on said PCB configured to convert said first voltage and said second voltage into a first digital signal and a second digital signal; and

disposing a calculation circuit on said PCB configured to receive said first and second digital signals, and said temperature and perform said calculation.

106. (Previously Presented) A method for determining a thickness of a component of a circuit on a printed circuit board (PCB), said method comprising the steps of:

disposing a circuit onto a PCB;

embedding a power strip having a first predetermined length and width into said PCB;

embedding a calibration strip having a second predetermined length and width into said PCB;

providing a second power supply to said calibration strip and grounding said calibration strip so that a current flows through said calibration strip;

regulating a temperature of said PCB to be a set temperature;

measuring a first voltage across said power strip;

measuring a second voltage across said calibration strip; and

calculating said thickness of said power strip based on said first and second voltages, said set temperature, said first predetermined length and width and said second predetermined length and width.

107. (Previously Presented) The method of claim 106 wherein said step of regulating the temperature of said board comprises a step of heating said board.

108. (Previously Presented) The method of claim 107 wherein said calibration strip is placed in close proximity to said power strip during said embedding step.

109. (Previously Presented) The method of claim 106 further comprising the step of:

disposing a calibration circuit on said PCB configured to perform said measurement and said calculation steps.

110. (Previously Presented) The method of claim 109 wherein the step of calculating said thickness further comprises steps of:

measuring and amplifying said first voltage;

measuring and amplifying said second voltage; and

converting said first and second voltages into first and second digital signals respectively.

111. (Previously Presented) The method of claim 110 wherein the step of disposing a calibration circuit further comprises steps of:

disposing a differencing circuit on said PCB configured to measure said first voltage and said second voltage;

disposing an analog to digital converter on said PCB configured to convert said first voltage and said second voltage into a first digital signal and a second digital signal; and

disposing a calculation circuit on said PCB configured to receive said first and second digital signals, perform said calculation based on said first and second digital signals and said set temperature.

112. (Previously Presented) A system for measuring a thickness of a circuit component on a printed circuit board (PCB), said system comprising:

a first circuit means;

a power strip means for providing power to a power plane for providing power to said first circuit means disposed in said PCB;

a calibration strip means having a predetermined width and being disposed in said PCB;

a temperature sensor means for measuring a temperature of said calibration strip means; and

a second circuit means for determining the thickness of said calibration strip means based on at least said temperature of said calibration strip means.

113. (Previously Presented) The system according to claim 112, wherein said power strip means and said calibration strip means comprise a same type of material.

114. (Previously Presented) The system according to claim 113, wherein said power strip means and said calibration strip means comprise substantially copper.

115. (Previously Presented) The system according to claim 112, wherein said second circuit means is configured to calculate said thickness of said calibration strip means further based upon a first voltage across at least two vias of said power strip means and a second voltage across at least two vias of said calibration strip means.

116. (Previously Presented) The system of claim 115, wherein said second circuit means is further configured to measure said first voltage and said second voltage.

117. (Previously Presented) The system of claim 116, wherein calibration strip means and said power strip means are each of a predetermined length, and said second circuit means is configured to calculate said thickness of said calibration strip means further based said predetermined lengths.

118. (Previously Presented) The system according to claim 116, wherein said power strip means has a first predetermined length and width, and said calibration strip means has a second predetermined length and width, and said second circuit means is configured to calculate said thickness of said calibration strip means further based upon said first predetermined length and width and said second predetermined length and width.

119. (Previously Presented) The system according to claim 116 further comprising:

a first power supply means for supplying power to said power strip means; and

a second power supply means for supplying a precision current supply to said calibration strip means,;

wherein said thickness is determined further based on a value of a current from said second power supply means.

120. (Previously Presented) The system according to claim 119, wherein said second power supply means comprises a precision resistor means connected in series with said calibration strip means.

121. (Previously Presented) The system according to claim 116, wherein said second circuit means further comprises:

a first operational amplifier means for measuring said first voltage;

a second operational amplifier means for measuring said second voltage; and

an analog to digital converter means for receiving said first and second voltages output from said first and second operational amplifiers means respectively, and said temperature from said temperature sensor means.

122. (Previously Presented) The system according to claim 116, wherein said second circuit means further comprises:

a differencing circuit means for measuring said first voltage and said second voltage and producing a first signal and a second signal corresponding to said first voltage and said second voltage respectively;

an analog to digital converter means for converting said first signal and said second signal into a first digital signal and a second digital signal; and

a calculation circuit means for receiving said first and second digital signals and performing said power calculation.

123. (Previously Presented) The system according to claim 122, wherein said calculation circuit means comprises a computer processor means.

124. (Previously Presented) The system according to claim 116, wherein said calibration strip means is disposed in a same proximity of said power strip means on said PCB.

125. (Previously Presented) A system for measuring a thickness of circuit components on a printed circuit board (PCB), said system comprising:

a first circuit means;

a power strip means for providing power to a power plane for providing power to said first circuit means disposed in said PCB;

a calibration strip means having a predetermined width and being disposed in said PCB;

a temperature regulator means for maintaining said PCB at a set temperature; and

a second circuit means for determining the thickness of said calibration strip means based on at least said set temperature of said calibration strip means.

126. (Previously Presented) The system according to claim 125, wherein said power strip means and said calibration strip means comprise a same type of material.

127. (Previously Presented) The system according to claim 125, wherein said power strip means and said calibration strip means comprise substantially copper.

128. (Previously Presented) The system according to claim 127, wherein said second circuit means is configured to calculate said thickness of said calibration strip means further based upon a first voltage across at least two vias of said power strip means and a second voltage across at least two vias of said calibration strip means.

129. (Previously Presented) The system of claim 128, wherein said second circuit means is further configured to measure said first voltage and said second voltage.

130. (Previously Presented) The system of claim 129, wherein calibration strip and said power strip means are each of a predetermined length, and said second circuit means is configured to calculate said thickness of said calibration strip means further based said predetermined lengths.

131. (Previously Presented) The system according to claim 130, wherein said power strip means has a first predetermined length and width, and said calibration strip means has a second predetermined length and width, and said second circuit means is configured to calculate said thickness of said calibration strip means further based upon

said first predetermined length and width and said second predetermined length and width.

132. (Previously Presented) The system according to claim 130, further comprising:

a first power supply means for supplying power to said power strip means; and

a second power supply means for supply a precision current supply to said calibration strip means;

wherein said thickness is determined further based on a value of a current from said second power supply means.

133. (Previously Presented) The system according to claim 132, wherein said pr second power supply means comprises a precision resistor means connected in series with said calibration strip means.

134. (Previously Presented) The system according to claim 130, wherein said second circuit further comprises:

a first operational amplifier means for measuring said first voltage;

a second operational amplifier means for measuring said second voltage; and

an analog to digital converter means for receiving said first and second voltages output from said first and second operational amplifier means respectively, and said set temperature.

135. (Previously Presented) The system according to claim 130, wherein said second circuit further comprises:

a differencing circuit means for measuring said first voltage and said second voltage and producing a first signal and a second signal corresponding to said first voltage and said second voltage respectively;

an analog to digital converter means for receiving said first signal and said second signal from said differencing circuit and converting said first signal and said second signal into a first digital signal and a second digital signal; and

a calculation circuit means for receiving said first and second digital signals and performing said power calculation.

136. (Previously Presented) The system according to claim 135, wherein said calculation circuit means comprises a computer processor means.

137. (Previously Presented) The system according to claim 125, wherein said calibration strip means is disposed in a same proximity of said power strip means on said PCB.

138. (Previously Presented) The system according to claim 130, wherein said calibration strip means is disposed in a same proximity of said power strip means on said PCB.

139. (Previously Presented) The system according to claim 125, wherein said temperature regulator means comprises a fan and a heating element.

140. (Previously Presented) The system according to claim 130, wherein said temperature regulator means comprises a fan and a heating element.